

**TUNNEL JUNCTION AND CHARGE PERPENDICULUR-TO-PLANE  
MAGNETIC RECORDING SENSOR AND  
METHOD OF MANUFACTURE**

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**ABSTRACT OF THE INVENTION**

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Magnetic tunnel junction (MTJ) and charge perpendicular-to-plane (CPP) magnetic sensors are disclosed which have a first antiferromagnetic layer for pinning the magnetization direction in a pinned layer and a second antiferromagnetic layer for providing bias stabilization of a free layer. The two antiferromagnetic layers may be formed from the same material and using a spin-flop effect may be initialized simulataneously. A disk drive using these sensors is disclosed.